APPENDIX 17

RED ROCK CANYON NATIONAL CONSERVATION AREA ESTABLISHMENT ACT OF 1990

--H.R.4559— Public Law 101-621 --- November 16, 1990
101 st Congress

An Act

To establish the Red Rock Canyon National Conservation Area.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the `Red Rock Canyon National Conservation Area Establishment Act of 1990'.

SEC. 2. DEFINITIONS.

For the purposes of this Act, the term--

(a) `conservation area' means the Red Rock Canyon National Conservation Area established pursuant to section 3 of this Act;

(b) `public lands' has the meaning stated in section 103(e) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1702(e)); and

(c) `Secretary' means the Secretary of the Interior.

SEC. 3. ESTABLISHMENT OF THE CONSERVATION AREA.

(a) IN GENERAL-

(1) In order to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the area in southern Nevada containing and surrounding the Red Rock Canyon and the unique and nationally important geologic, archeological, ecological, cultural, scenic, scientific, wildlife, riparian, wilderness, endangered species, and recreation resources of the public lands therein contained, there is established the Red Rock Canyon National Conservation Area.

(2) The conservation area shall consist of approximately 83,100 acres of generally depicted on a map entitled `Red Rock Canyon National Conservation Area--Proposed' numbered NV-RRC-NCA-001, and dated June, 1990.

(3) The map referred to in paragraph (2) shall be on file and available for inspection in the appropriate offices of the Bureau of Land Management, Department of the Interior.

(b) LEGAL DESCRIPTION-

(1) As soon as practicable after the date of enactment of this Act, the Secretary shall file a legal description of the conservation area established by subsection (a) with the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the United States House of Representatives, and such legal description shall have the same force and effect as if included in this Act, except that the Secretary may correct clerical and typographic errors in legal description.

(2) The legal description described in paragraph (1) shall be on file and available for public inspection in the office of the Director of the Bureau of Land Management, Department of the Interior.

(c) DISCREPANCIES-

In case of any discrepancy between or among the map described in subsection (a), the amount of acreage stated in subsection (a), or the legal description filed by the Secretary pursuant to subsection (b), the map described in subsection (a) shall control any question concerning the boundaries of the conservation area.

SEC. 4. MANAGEMENT.

(a) IN GENERAL- The Secretary, acting through the Director of the Bureau of Land Management, shall, subject to valid existing rights, manage the conservation area to conserve, protect, and enhance the resources described in section 3 in accordance with this Act, the Federal Land Policy and Management Act of 1976, and other applicable laws. The Secretary shall only allow such uses of the conservation area as he finds will further the purposes for which the conservation area is established.

(b) HUNTING-

(1) Subject to paragraph (2), the Secretary shall permit hunting within the conservation area in accordance with the laws of the State of Nevada.

(2) The Secretary, after consultation with the Nevada Department of Wildlife, may issue regulations designating zones where and establishing when hunting shall not be permitted for reasons of public safety, administration, or public use and enjoyment.

(c) PREVENTIVE MEASURES- Nothing in this Act shall preclude such measures as the Secretary deems necessary to prevent devastating fire or infestation of insects or disease within the conservation area.

(d) MECHANIZED VEHICLES- Except when needed for administrative or emergency purposes, the use of mechanized vehicles in the conservation area shall be allowed only on roads and trails

specifically designated for such use as provided in the management plan prepared pursuant to section 5.

(e) LIMITS ON VISITATION AND USE- The Secretary may limit visitation and use of the conservation area as the Secretary finds appropriate for the protection of the resources of the conservation area.

SEC. 5. MANAGEMENT PLAN.

(a) IN GENERAL-

(1) Within 3 full fiscal years following the fiscal year in which the date of enactment of this Act occurs, the Secretary shall develop and transmit to the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the United States House of Representatives, a general management plan for the conservation area, which shall describe the appropriate uses and development of the conservation area consistent with the purposes of this Act.

(2) The management plan described in paragraph (1) shall be developed with full public participation and shall include--

(A) an implementation plan for a continuing program of interpretation and public education about the resources and values of the conservation area;

(B) a proposal for administrative and public facilities to be developed, expanded, or improved for the conservation area including the Red Rock Canyon visitors center, to accommodate visitors to the conservation area;

(C) a cultural resources management plan for the conservation area prepared in consultation with the Nevada State Historic Preservation Officer, with emphasis on the preservation of the resources in the conservation area and the interpretive, educational, and long-term scientific uses of these resources, giving priority to the enforcement of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa et seq.) and the National Historic Preservation Act (16 U.S.C. 470 et seq.) within the conservation area;

(D) a wildlife resource management plan for the conservation area prepared in consultation with appropriate departments of the State of Nevada and using previous studies of the area; and

(E) a recreation management plan, including nonmotorized dispersed recreation opportunities for the conservation area in consultation with appropriate departments of the State of Nevada.

(b) WILDERNESS STUDY AREAS- Subject to section 7 of this Act, nothing in this Act is intended to alter the requirements of section 603 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782), or section 5(a) of the National Forest and Public Lands of Nevada Enhancement Act of 1988 (102 Stat. 2751), as those requirements apply to the lands within, or adjacent to the conservation area as of the date of enactment of this Act.

.SEC. 6. ACQUISITIONS

(a) IN GENERAL-

(1) Within the conservation area, and subject to the provisions of this section, the Secretary is authorized to acquire lands, interests in lands, and associated water rights, by donation, purchase with donated or appropriated funds, exchange for Federal lands outside the conservation area, or transfer from another Federal agency with the concurrence of the head of the appropriate agency thereof.

(2) Lands or interests therein owned by the State of Nevada or a political subdivision thereof may be acquired by donation or exchange only.

(3) No privately owned lands, interests in lands, or associated water rights, may be acquired without the consent of the owner thereof unless the Secretary determines that, in his judgment, the property is subject to, or threatened with, uses which are having, or would have, an adverse impact on the resource values for which the conservation area was established.

(4) Any lands, waters, or interests therein within the boundaries of the conservation area which after the date of enactment of this Act may be acquired by the United States shall be incorporated into the conservation area and be managed accordingly, and all provisions of this Act and other laws applicable to conservation areas shall apply to such incorporated lands.

(b) LAND EXCHANGES- All exchanges pursuant to subsection (a) shall be made in a manner consistent with section 206 of the Federal Land Management and Policy Act of 1976 (43 U.S.C. 1716).

SEC. 7. WITHDRAWAL.

Except as specifically authorized in this Act, and subject to valid existing rights, all Federal lands within the conservation area and all lands and interests therein which are acquired by the United States after the date of enactment of this Act for inclusion in the conservation area are withdrawn from all forms of entry, appropriation, or disposal under the public land laws, from location, entry, and patent under the mining laws, and from operation under the mineral leasing and geothermal leasing laws, and all amendments thereto.

SEC. 8. COOPERATIVE AGREEMENTS.

In order to encourage unified and cost-effective management and interpretation of natural and cultural resources in the conservation area, the Secretary is authorized and encouraged to enter into cooperative agreements with other Federal, State, and local agencies and nonprofit entities providing for the management and interpretation of natural and cultural resources in the conservation area.

SEC. 9. COORDINATED MANAGEMENT.

The Secretary shall coordinate the management of the conservation area with that of surrounding State and Federal lands in such a manner as best to meet the present and future needs of the American people.

SEC. 10. WATER.

(a) Within the conservation area designated by this Act, there is hereby reserved a quantity of water sufficient to fulfill the purposes for which the conservation area is established.

(b) The priority date of the water rights reserved in paragraph (a) shall be the date of enactment of this Act.

(c) The Secretary shall take all steps necessary to protect the water rights reserved by this section, including the filing of a claim for quantification of such rights in any appropriate water adjudication in the courts of the State of Nevada in which the United States is or may be joined and which is conducted in accordance with the McCarren Amendment (43 U.S.C. 666).

(d) The Federal water rights reserved by this Act shall be in addition to any water rights which may have been previously secured by the United States for purposes other than for the conservation area.

(e) The Federal water rights reserved by this Act are specific to the conservation area designated by this Act. Nothing in this Act shall be construed as establishing a precedent with regard to any future designations, nor shall it constitute an interpretation of any other Act or any designation.

SEC. 11. NO BUFFER ZONES.

The Congress does not intend for the establishment of the conservation area to lead to the creation of protective perimeters or buffer zones around the conservation area. The fact that there may be activities or uses on lands outside the conservation area that would not be permitted in the conservation area shall not preclude such activities or uses on such lands up to the boundary of the conservation area to the extent consistent with other applicable law.

SEC. 12. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated such sums as are necessary to carry out this Act.
Speaker of the House of Representatives.
Vice President of the United States and
President of the Senate.
END

APPENDIX 18

RED ROCK CANYON NATIONAL CONSERVATION AREA BOUNDARY EXPANSION

--H.R.3050— Public Law 103-450 ---November 2, 1994
103 rd Congress

An Act

To expand the boundaries of the Red Rock Canyon National Conservation Area.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. BOUNDARY EXPANSION.

Section 3(a)(2) of the Red Rock Canyon National Conservation Area Establishment Act of 1990 (16 U.S.C. 460ccc-1(a)(2)) is amended to read as follows:

` (2) The conservation area shall consist of approximately 195,610 acres as generally depicted on a map entitled `Red Rock Canyon National Conservation Area--Proposed Expansion', numbered NV-RRCNCA-002, and dated July 1994.'.

SEC. 2. OTHER AMENDMENTS TO THE RED ROCK CANYON NATIONAL CONSERVATION AREA ESTABLISHMENT ACT OF 1990.

(a) DEADLINE FOR MANAGEMENT PLAN- Section 5(a)(1) of the Red Rock Canyon National Conservation Area Establishment Act of 1990 (16 U.S.C. 460ccc-3(a)(1)) is amended by striking `Within 3 full fiscal years following the fiscal year in which the date of enactment of this Act occurs,' and inserting in lieu thereof `No later than January 1, 1997,'.

(b) EXCHANGE AUTHORITY- Section 7 of the Red Rock Canyon National Conservation Area Establishment Act of 1990 (16 U.S.C. 460ccc-5) is amended--

(1) by striking `Except as specifically authorized' and inserting in lieu thereof `(a) Except as specifically authorized'; and

(2) by adding at the end thereof a new subsection, as follows:

“(b) The Secretary may transfer to the owner of the Old Nevada recreation facility the approximately 20 acres of Federal lands within the conservation area which, on March 1, 1994, were used to provide parking for visitors to such facility, in exchange for lands of

equal or greater value within the conservation area acceptable to the Secretary.”.

(c) PRIORITY DATES- Section 10(b) of the Red Rock Canyon National Conservation Area Establishment Act of 1990 (16 U.S.C. 460ccc-8(b)) is amended by striking `Act.' and by inserting in lieu thereof `Act, except that as related to rights associated with lands added to the conservation area after such date, the priority date shall be the date of enactment of the Act adding such lands to the conservation area.'.

SEC. 3. POTENTIAL CONSERVATION LANDS.

(a) WITHDRAWAL- Subject to valid existing rights, the lands identified in subsection (b) are hereby withdrawn from all forms of entry under the public land laws, including the mining laws, and from operation of the mineral and geothermal leasing laws: Provided, That nothing in this subsection shall limit the issuance of any necessary licenses or public land rights-of-way for any hydroelectric project involving such lands.

(b) LANDS- The lands referred to in subsection (a) are the approximately 1,280 acres of public lands as generally depicted on the map entitled `Potential Conservation Lands: Possible Hydroelectric Project' dated July, 1994.

(c) FUTURE STATUS- (1) Effective on the date 5 years after the date of enactment of this Act, the lands described in subsection (b) shall be added to the Red Rock Canyon National Conservation Area unless before such effective date all necessary licenses and public land rights-of-way have been issued for a hydroelectric project involving some or all of such lands.

(2) For purposes of section 10(b) of the Red Rock Canyon National Conservation Area Establishment Act of 1990, as amended by this Act, the date on which the lands identified in subsection (b) of this section are added to the Red Rock Canyon National Conservation Area shall be deemed to be the date of enactment of an Act adding such lands to the conservation area.

SEC. 4. AUSTIN, NEVADA MUSEUM.

(a) LANDS- The Austin Historic Mining District Historical Society (hereafter referred to as `the Historical Society') shall be permitted to use the lands located in Austin, Nevada, identified as township 19 North, range 44 East, section 19, block 38, lots 1 through 16, assessor's parcel number 01-147-01, amounting to approximately 0.59 acres, in accordance with the requirements of this section.

(b) USES- The Historical Society's use of the lands identified in subsection (a) shall be subject to the requirements of this section and shall be limited to use for a museum or other facility to illustrate the history of the Austin Historic Mining District.

(c) TERMS AND CONDITIONS- (1) The Secretary of Agriculture shall permit the Historical Society to use the lands identified in subsection (a) for a period of 20 years after the date of enactment of this Act. After such period, the Historical Society may continue to use such lands, at the discretion of the Secretary of Agriculture.

(2) During the period of 20 years after the date of the enactment of this Act, the Historical Society, if it elects to use the lands identified in subsection (a), shall pay to the Secretary of Agriculture, on behalf of the United States, an annual rental of $100.

(3) If the Secretary of Agriculture permits continued use of the lands identified in subsection (a) after the end of the period of 20 years after the date of enactment of this Act, the Secretary of Agriculture shall require payment of such annual rental as the Secretary determines reasonable.

(4) At all times that the lands identified in subsection (a) are used by the Historical Society, the Historical Society shall be solely responsible for all necessary maintenance and repairs of all structures and improvements on such lands and for all necessary payments for utilities or other services.

(5) All rentals received by the Secretary of Agriculture under this section shall be deemed to have been deposited with such Secretary pursuant to the Act of December 4, 1967 (16 U.S.C. 484a).

APPENDIX 19

LIST OF ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
AFFIRMS	Administrative and Forest Fire Information Retrieval System
AML	Appropriate Management Level
AMS	Analysis of the Management Situation
ARPA	Archeological Resource Protection Area
BLM	Bureau of Land Management
CCC	Civilian Conservation Corps
CFS	Cubic Feet Per Second
CFR	Code of Federal Regulations
CR	Creek
CRM	Cultural Resource Management
CRMP	Cultural Resource Management Plan
DRI	Desert Research Institute
DSN	Desert Side-notched
DUI	Driving Under the Influence (of alcohol)
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEMA	Federal Emergency Medical Agency
FLPMA	Federal Land Policy and Management Act
FMAP	Fire Management Activity Plan
FMZ	Fire Management Zone
FORRC	Friends Of Red Rock Canyon
FWS	Fish and Wildlife Service
GMP	General Management Plan
GPM	Gallons Per Minute
HMA	Herd Management Area
HMP	Herd Management Plan
IGMP	Interim General Management Plan
LC	Liaison Council
LWCFA	Land and Water Conservation Fund Act
MEA	Management Emphasis Area
MFP	Management Framework Plan
MSHCP	Multiple Species Habitat Conservation Plan
NAS	National Archaeological Survey
NCA	National Conservation Area
NDOT	Nevada Department of Transportation
NDOW	Nevada Division of Wildlife

NDSP	Nevada Division of State Parks
NEPA	National Environmental Policy Act
NNREC	Nevada Natural Resource Education Council
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
OHV	Off Highway Vehicle
ORV	Off Road Vehicle
ORWAG	Outdoor Recreation and Wilderness Assessment Group
PCRNA	Pine Creek Resource Natural Area
PFC	Proper Functioning Condition
PLAD	Public Lands Appreciation Day
PM10	Particulate Matter (suspended particles less than 10 microns in size)
RAC	Resource Advisory Council
RAWS	Remote Automatic Weather Station
RMP	Resource Management Plan
ROS	Recreation Opportunity Spectrum
RRC	Red Rock Canyon
RRCIA	Red Rock Canyon Interpretive Association
RRCNCA	Red Rock Canyon National Conservation Area
RRCRL	Red Rock Canyon Recreation Lands
RS	Revised Statute
SAR	Search and Rescue
SHPO	State Historic Preservation Officer
SMA	Spring Mountains Association
SMNRA	Spring Mountains National Recreation Area
SNRAE	Southern Nevada Rock Art Enthusiasts
SNWA	Southern Nevada Water Authority
SR	State Route
SRA	Stateline Resource Area
SRP	Special Recreation Permit
T&E	Threatened and Endangered
UA	Use Authorization
UNLV	University of Nevada Las Vegas
USDI	United States Department of the Interior
USFS	United States Forest Service
VQO	Visual Quality Objective
WSA	Wilderness Study Area

APPENDIX 20 TRAIL OPTIONS

EXISTING DESIGNATED TRAILS
(same for all alternatives)

TRAILS	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
Cottonwood Valley (single track)	59.8 miles - 18.1 acres				
Grand Circle Loop	11.0 miles - 3.2 acres (CTF)				
Moenkopi Loop	2.0 miles - .72 acres (CTF)				
Entrance Lot to Calico I	.5 miles - .18 acres				
Cave Canyon	.7 miles - .3 acres				
Escarpment Base	5.2 miles - 1.9 acres				
White Rock Loop	6.1 miles - 1.8 acres (CTF)				
La Madre	1.5 miles - .4 acres (CTF)				
Keystone Thrust	1.0 miles - .3 acres (CTF)				
Lost Creek/Childrens Discovery	.7 miles - .3 acres				
Willow Springs Loop	1.3 miles - .5 acres				
Ice Box Canyon	1.0 miles - .4 acres				
Pine Creek	1.9 miles - .7 acres				
Arnight	1.6 miles - .4 acres (CTF)				
N & S Oak Creek	3.5 miles - 1.3 acres				
First Creek	1.5 miles - .5 acres				
North Peak/Bridge Mountain	2.0 miles - .7 acres				
Brownstone	1.7 miles - .6 acres				
Totals	103.0 miles - 32.27 acres				

CTF - Common Trail Factor - The acres for trail sections in common to more than one trail are counted only once.

APPENDIX 20 TRAIL OPTIONS

EXISTING ROUTES CONSIDERED FOR TRAIL DESIGNATION

TRAILS	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
Old road along E-W ridge just south of Pine Creek 1.5 mi/.6 ac	yes	no	no	no	no
Old E-W road just north of Oak Creek Knoll 1.0 mi/.4 ac	yes	no	no	no	no
Horse trail spanning from First Creek to Lost Creek 7.0 mi/2.5 ac	yes	no	yes	yes	yes
Section between N & S Oak Creek legs only 1.7 mi/.6 ac	no	Yes	no	no	no
Connector horse trails going north & south from Scenic Drive exit lot 1.0 mi/.4 ac	yes	no	yes	yes	yes
Horse loop trail directly north of Red Rock Vista 5.8 mi/2.1 ac	yes	no	yes	yes	yes
Old road running due south from White Rock turn-off 1.3 mi/.5 ac	yes	no	no	no	no
Old road between Sandstone Quarry and Willow Spring turn-offs 2.0 mi/.7 ac	yes	no	yes	no	yes
Twilight Zone trails 18.1 mi/5.5 ac	yes	no	yes	yes	yes
Blue Diamond to Jean trail (portion within the NCA) 7.0 mi/2.1 ac	yes	no	yes	yes	yes
Totals	44.7mi 14.7ac	1.7mi .6ac	40.9mi 13.2ac	38.9mi 12.5ac	40.9mi 13.2ac

APPENDIX 20 TRAIL OPTIONS

PROPOSED TRAILS REQUIRING NEW CONSTRUCTION

TRAIL	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
First Creek to Oak Creek 1.3 mi/.5 ac	yes	yes	yes	yes	yes
Kraft Rocks & Gateway Canyon 1.1 mi/.8 ac	yes	yes	yes	yes	yes
Red Valley Equestrian 2.0 mi/.6 ac	yes	no	yes	yes	yes
Totals	4.4 mi	2.4 mi	4.4 mi	4.4 mi	4.4 mi
	1.9 ac	1.3 ac	1.9 ac	1.9 ac	1.9 ac

TRAILS SUMMARY

TRAILS	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
Existing designated trails	103.0mi	103.0mi	103.0mi	103.0mi	103.0mi
	32.27ac	32.27ac	32.27ac	32.27ac	32.27ac
Existing Routes (not designated)	44.7 mi	1.7mi	40.9 mi	38.9 mi	40.9 mi
	14.7 ac	.6ac	13.2 ac	12.5 ac	13.2 ac
Proposed New Construction	4.4mi	2.4mi	4.4mi	4.4mi	4.4mi
	1.9ac	1.3ac	1.9ac	1.9ac	1.9ac

Totals	152.1mi	107.1mi	148.3mi	146.3mi	148.3mi
	48.87ac	34.17ac	47.37ac	46.67ac	47.37ac

APPENDIX 20 **ROAD OPTIONS**

DIRT ROADS NORTH OF LA MADRE
(north expansion)

DIRT ROAD	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
#2 2.8 mi/6.8 ac	open	open	close	close	close
#3 8.8 mi/21.3 ac	open	open	open	open	open
#3A 3.0 mi/7.3 ac	open	open	open	close	open
#4 1.8 mi/4.4 ac	open	open	close	close	close
#5 7.4 mi/17.9 ac	open	open	open	open	open
#5A .3 mi/.7 ac	open	open	close	close	close
#6 .9 mi/2.1 ac	open	open	open	close	close
#7E 1.0 mi/2.4 ac	open	open	close	close	close
#7W 1.5 mi/3.6 ac	open	open	open	close	open
#9 8.2 mi/20.0 ac	open	open	close	close	close
#10 4.5 mi/10.8 ac	open	open	open	open	open

#11 2.2 mi/5.4 ac		open	open	open	open	open
#12 2.7 mi/6.6 ac		open	open	close	close	close
#13 1.5 mi/3.7 ac		open	open	open	open	open
#14 3.7 mi/8.9 ac		open	open	open	open	open
#15 2.9 mi/6.9 ac		open	open	open	open	open
#16 7.1 mi/17.2 ac		close	close	close	close	close
#17 9.3 mi/22.6 ac		close	close	close	close	close
Totals	leave open	53.2 mi 128.8 ac	53.2 mi 128.8 ac	36.4 mi 87.9 ac	31.0 mi 74.9 ac	35.5 mi 85.8 ac
	close	16.4 mi 39.8 ac	16.4 mi 39.8 ac	33.2 mi 80.7 ac	38.6 mi 93.7 ac	34.1 mi 82.8 ac

INSERT MAP# M50

APPENDIX 20 ROAD OPTIONS

DIRT ROADS IN THE SOUTHERN NCA EXPANSION

DIRT ROAD	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
#18 6.9 mi/16.7 ac	open	open	open	open	open
#19 .6 mi/1.4 ac	open	open	open	close	close
#20 1.8 mi/4.4 ac	open	open	close	close	close
#21 1.2 mi/3.0 ac	open	open	open	close	open
#22 1.5 mi/3.5 ac	open	open	open	open	open

#23 .9 mi/2.1 ac <u>Partial</u> .4 mi/1.0 ac		open	open	partial	close	partial
#24 2.8 mi/6.7 ac		open	open	open	open	open
Totals	leave open	15.7 mi 37.8 ac	15.7 mi 37.8 ac	13.5 mi 32.3 ac	11.2 mi 26.9 ac	12.8 mi 30.9 ac
	close	0.0 mi 0.0 ac	0.0 mi 0.0 ac	2.2 mi 5.5 ac	4.5 mi 10.9 ac	2.9 mi 6.9 ac

INSERT MAP# M51

APPENDIX 20 ROAD OPTIONS

DIRT ROADS SUMMARY

DIRT ROADS		ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
North of La Madre	remain open	53.2 mi 128.8 ac	53.2 mi 128.8 ac	36.4 mi 87.9 ac	31.0 mi 74.9 ac	35.5 mi 85.8 ac
	close	16.4 mi 39.8 ac	16.4 mi 39.8 ac	33.2 mi 80.7 ac	38.6 mi 93.7 ac	34.1 mi 82.8 ac
Original NCA	remain open	23.9 mi 57.8 ac	23.9 mi 57.8 ac	23.9 mi 57.8 ac	23.9 mi 57.8 ac	23.9 mi 57.8 ac
	close	49.8 mi 72.5 ac	49.8 mi 72.5 ac	49.8 mi 72.5 ac	49.8 mi 72.5 ac	49.8 mi 72.5 ac
Southern Expansion	remain open	15.7 mi 37.8 ac	15.7 mi 37.8 ac	13.5 mi 32.3 ac	11.2 mi 26.9 ac	12.8 mi 30.9 ac
	close	0.0 mi 0.0 ac	0.0 mi 0.0 ac	2.2 mi 5.5 ac	4.5 mi 10.9 ac	2.9 mi 6.9 ac
Totals	remain open	92.8 mi 224.4 ac	92.8 mi 224.2 ac	73.8 mi 178.0 ac	66.1 mi 159.6 ac	72.2 mi 174.5 ac
	close	66.2 mi 112.3 ac	66.2 mi 112.3 ac	85.2 mi 158.7 ac	92.9 mi 177.1 ac	86.8 mi 162.2 ac

APPENDIX 20

PAVING PROPOSALS

PAVING	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
Existing Roads, Lots & Overlooks					
Red Spring	.25 mile plus lot (1 acre)				
White Rock	.55 mile plus lot (1.75 acre)				
Willow bus turn around loop	.1 mile (.24 acre)				
Lost Creek lot	.18 acre				
N Oak Creek	.7 mile plus lot (2 acres)				
New Construction					
Calico III	pave - 1.2 acres				

Return road from Sandstone Quarry	pave 2.65 mi 5.78 ac	no road	pave 2.65 mi 5.78 ac	no road	pave 2.65 mi 5.78 ac
Sandstone to Willow trail	2.0 mi .7 ac	no trail	2.0 mi .7 ac	no trail	2.0 mi .7 ac
Sandstone / Turtlehead	pave .52 ac	Do not construct			
Red Rock Wash expansion	pave - .5 acre				
Rangers Choice	pave .47 ac	Do not construct			
Pine Creek expansion	pave - .36 acre				
Totals	6.3 mi	1.6 mi	6.3 mi	1.6 mi	6.3 mi
	14.7 ac	7.2 ac	13.7 ac	7.2 ac	13.7 ac

APPENDIX 21

General Management Plan and

Draft Environmental Impact Statement

for the

Red Rock Canyon National Conservation Area:

Fire Ecology and Management

Mark (Tim) Rash

July 21, 1998

INTRODUCTION

As with most western ecosystems, the physical phenomenon of fire assumes a dual role in the Red Rock Canyon natural environment. Depending on the vegetative community involved (Appendix 4), fire can be either an agent of destructive, far-reaching consequences or a necessary process of ecologic rejuvenation and maintenance. Which affect depends on whether the various communities did or did not evolve in environments in which natural fire occurred with some regularity. Some plant assemblages have developed selective adaptations to periodic fire disturbance, and other communities have not (and with all gradations in between).

Harmful Fire Effects

At one end of this spectrum are vegetative communities which can be characterized as severely *fire-intolerant*, such as Blackbrush (and to a lesser extent, the Creosote bush community). In their native condition, these hot, dry low elevation desert communities hosted perennial bunchgrasses that typically would preclude the occasional lightning fire from spreading much beyond the point of origin, limiting the fire size to literally one or two trees or tall shrubs. Reflecting their harsh habitat, the native Mojave grasses grew in sparse densities and discontinuous arrangements that, barring strong winds or other such extenuating conditions, simply would not allow fire to carry itself from one plant to the next.

Today this situation has been drastically altered by the widespread presence of highly flammable, and fire-prone, species of non-native annual grasses. Chief among these are Red brome (Bromus rubens) and Cheatgrass (Bromus tectorum), which typically form dense, continuous and extensive stands on disturbed sites. In combination with the increased sources of ignition from human activities, the result now is that fire has become a commonplace occurrence within the non-fire adapted desert shrub communities. Especially for the Blackbrush type the biotic consequences are double-edged and fundamental in scope. Not only is fire lethal to individual plants, which lack stump-sprouting ability or other such physiological adaptations to fire disturbance, but in nearly all instances the post-fire site becomes overwhelmingly dominated by one or both of the invasive brome grasses. While not yet conclusively proven, a growing opinion among successional pattern researchers is that this species composition change is permanent. The basic explanation for this perpetual disturbance state (or, *disclimax community*) has to do with the propensity of converted brome sites to subsequently reburn, often in a cycle of relatively high frequency. With each successive fire native plants become eliminated (whether holdover survivors from previous fires or site-recolonizing individuals), creating habitat niche openings which become occupied by the exotic grasses, due to their many competitive advantages over most native plants.

Throughout the west this *type conversion* fire effect is becoming recognized as an ecological problem of the first order. In the Mojave Desert and other regions of the Southwest fire conversion of native shrublands to Bromus sp. dominance affects the population status of the Desert tortoise (Gopherus agassazii). This problem affects the Red Rock Canyon NCA, as does the threat posed by fire to the entire known global population of the Blue Diamond cholla (Opuntia whipplei var. multigeniculata).

This special status plant (Appendix 1) occupies the southern end of Blue Diamond Hill, which burned extensively over its northern portion during the early 1980's and continues to experience fires up to the present. One of these, a 40-acre fire in 1993, started less than three miles from occupied Blue Diamond cholla habitat. Another RRCNCA concern relative to fire-induced brome conversions is the loss of native biodiversity, both at the species and community level.

By somewhat fortunate coincidence, the majority of all property inholdings, visitor facilities and other improvements are located within the Blackbrush and Creosote bush vegetative communities. The BLM wildland firefighting mandate is to protect human life, property and natural resources, in that order. Wildfires occurring in this zone, whether lightning or human-caused, will be fought immediately and forcefully; the primary goal being to minimize burned acreages. Operational tactics will utilize the best available equipment, personnel, and technology consistent with Bureau wildfire policy (ie, suppression costs must be commensurate with the value of the resources protected, unless human life or property are at risk).

Beneficial Fire Effects

At the other end of the fire tolerance spectrum are those plants and communities that require periodic fires for their continued ecological health. Ponderosa pine (Pinus ponderosa) reproduces solely by seed, and then only under favorable seedbed conditions. Along with precipitation and soil moisture, the most critical of these requirements is a seedbed free of competing live vegetation and composed of a thin layer of organic litter (mineral soil needs to be exposed). Historically, fire disturbance has been the primary agent responsible for achieving such seedbed conditions, which is evidenced by the array of fire-survival adaptations found in this species (extremely thick bark, for example). Ecologically sound management principles, in light of the ecosystem focus on the Spring Mountains as a whole, dictate a much more flexible approach to fire management in Ponderosa pine habitats. The occupied range of this species in Red Rock Canyon essentially corresponds to the Sandstone Escarpment, including the rimrock plateau and most of the deep, east-facing canyons. The predominant vegetation found in these canyons is the Chaparral community, which also requires periodic physical disturbance for its ecological maintenance and health. Together with rockslides and wet season flashfloods, wildfire has served as one such disturbance source. Since this portion of the NCA is entirely free of private property and developments, the logical result is to treat the Escarpment rimrock and canyons as a second fire management zone. In this zone the primary fire suppression consideration is ecological appropriateness (ie, not suppressing beneficial fires) and firefighter safety.

Red Rock Canyon NCA consists of a third wildland fire management zone as well, one comprised of species and communities that can best be described as *fire neutral*. This intermediate zone coincides with the occupied range of its most representative species, the Juniper-Pinyon community. Even though neutral in the strict sense of their species-level fire ecology, fires occurring in dense, closed canopy Juniper-Pinyon woodlands do provide tangible benefits to many wildlife species, particularly Mule deer (Odocoileus hemionus). Whereas undisturbed Juniper-Pinyon communities tend to form monotypic, relatively sterile stands, canopy openings created by fires often are

recolonized by a variety of shrubs, forbs and grasses. Many of these shrubfield species are important as wildlife browse sources, including Bitterbrush (Purshia sp.), Gambel oak (Quercus gambelii) and Mountain-mahogany (Cercocarpus sp.).

The primary suppression objective in this fire zone is flexible and variable. On a case by case basis, the full range of firefighting strategies and tactics will be employed on wildfires within this upland portion of Red Rock Canyon, from all-out suppression to vigilant monitoring of those fires deemed to be beneficial to the natural resources and posing minimal threat to human life or property. Under current RRCNCA conditions, the exception to this scaled-response policy concerns the Mountain Springs vicinity. Any and all fires occurring within proximity of the township will be fought aggressively, forcefully and without delay.

Prescribed Fire

The two biological roles fire plays in the Red Rock Canyon natural environment translates into two management types of wildland fire as well. The first is the collective group of unplanned wildfires that result from lightning downstrikes and various human actions. The second type of management fires, those that transpire under strictly controlled conditions, are planned for in advance and are expected to yield specific beneficial ecological effects. These *prescribed* wildland fires are broken down further into natural ignition fires (lightning) and management ignitions (various torches and incendiary tools and devices).

The intensity, rate of spread, size and behavior of any wildland fire is dictated by a complex array of physical parameters that are unique for each given site. The term *prescribed fire* relates to the fact that these localized conditions can be measured and then assigned a range of magnitude under which a fire could be anticipated to display a behavior and intensity that would stay within the burn project prescription; thus achieving the predicted resource benefits while avoiding any undesirable control problems or safety risks.

The crucial site conditions used as burn prescription parameters are: 1) Weather variables (wind speed and direction, humidity and temperature, airmass stability, storm activity), 2) Topographical constants (slope, aspect, elevation, canyon effect ("chimneys")) and 3) Vegetative (ie, fire fuel) characteristics (plant moisture content, spatial arrangement and continuity of the available fuel plants, surface area to volume ratio of individual plants, ratio of dead to live vegetation, flammability (due to volatile oils or resins, or extreme curing (ie, drying)). In conformance with BLM Policy Manual 9200 (Fire Management), for any prescribed fire to take place, an approved burn plan must be on file, which identifies the acceptable range of numerical values for these prescription elements. The burn plan also documents the management objectives being sought, the operational methods and procedures to be used, and health and safety contingencies for both fire personnel and the public at large.

If the fire moves out of the target area or if burning conditions change in excess of the acceptable range, the project is terminated and the operation is treated as a wildfire and is suppressed. Fires that stay in prescription are allowed to burn until the objectives are attained or the fire either burns itself

out. If and when such time as prescribed fire management actions are authorized for the Red Rock Canyon NCA, their application will be restricted to the two upland elevation fire zones. No prescribed fires will occur in the Blackbrush and Creosote bush portions of RRCNCA.

Prescribed burns are formulated to address two broad categories of resource management objectives, *hazard (fuels) reduction* and *vegetative manipulation*. Hazard reduction projects utilize fire as an efficient, cost-effective means of eliminating or reducing unsafe accumulations of combustion prone vegetation, especially in locales where human safety and/or property values are at risk. Burn projects of this type are not foreseen for Red Rock Canyon, based on the lack of need and given the Conservation Area mandate to preserve the area's biological conditions in the least altered form possible. Yet at the same time, this same mandate calls for restoring natural fire to those areas of Red Rock Canyon in which periodic fire disturbance is an essential component of ecological balance and plant community maintenance.

For several decades now a policy of aggressive fire suppression has eliminated or greatly reduced this fundamental process from the Spring Range ecosystem. In turn this has created the need to conduct prescribed fires of the *vegetative manipulation* category, the purpose of which is to specifically alter (manipulate) plant characteristics such as community composition, species occurrence and density, vigor (age class proportions) and vertical structure (seral stage; species composition). Such prescribed burns are employed to mimic the desirable post-fire effects that would otherwise accrue to lightning fires if simply allowed to burn. A few of the more important of these benefits include revitalizing sites that have become dominated by overmature vegetation, setting back shrub community habitats that have become encroached by woody species, maintaining disturbance-dependent plant species and/or communities, and reducing the threat of catastrophic fires by curtailing the unnatural accumulation of vegetative fuelbeds (due to suppression actions over time).

The vast majority of all RRCNCA precribed burn projects are anticipated to take place in the Chaparral and Ponderosa pine communities of the escarpment canyons and rimrock, and in the upland Juniper-Pinyon woodlands of both the Spring Range and the La Madre Mountains. Depending on the site, these fire applications can be designed to restore ecological balance, trigger the competitive release of shaded-out plant species, yield seedbed conditions favorable to fire-adapted species and increase the quality of wildlife habitat (forage and cover). More fundamental though, is the management objective to simply return fire to its rightful place in the natural scheme and functioning of the Spring Mountains ecosystem.

Fire Planning & Mitigation

Fire management actions fall under the direction of the Las Vegas District Fire Management Activity Plan (FMAP), in conformance with policy guidance provided under Bureau Manual 9211. The basic thrust of this direction is that BLM fire management program actions are planned and executed in harmony with fire management objectives that have been designed to achieve resource management objectives. These are described in land use plans such as the Red Rock Canyon NCA General Management Plan and the Las Vegas Resource Management Plan.

The integration of fire and resource purpose is accomplished in two ways. At the planning stage, resource specialists have input into the FMAP process during the initial FMAP planning cycle and at all subsequent annual review & revision periods. At the implementation stage of prescribed fire projects on-the-ground natural resource considerations and effects are the responsibility of the Burn Manager (typically the same specialist who designed the project). Similarly, during the implementation stage of wildfire suppression operations resource management concerns and mitigation issues are addressed through the use of a Resource Advisor position.

Mitigation factors are not limited to the potentially destructive effects of the fire. Particularly in an area with the number of sensitive species and habitats as has Red Rock Canyon fire suppression operations can also create environmental impacts, including some of greater magnitude than would be caused by the fire itself. Overall, this suppression mitigation concern predominately applies to the following types of RRCNCA resources.

1) Desert floor; Creosote/Blackbrush communties:

   Low soil moisture, scant precipitation, extreme temperature and other hostile growing conditions means that vegetation and soils are exceedingly slow to recover from any surface disturbance, including the scraping of fire control lines or operating fire vehicles off-road (which can also contribute to subsequent unauthorized public off-road usage as well).

2) T&E Species and habitat (Desert tortoise):

   The mitigation emphasis is on minimizing burn acreages, due to the tendency for post-fire invasion of Creosote-bursage sites with exotic annual Brome grasses. This consideration must be balanced against the surface disturbance factors (1 above) on a case-by-case incident basis, however.

3) Wilderness Study Areas (Pine Creek WSA; La Madre Mtn WSA):

   Though both WSA's are dominated by fire-adapted or tolerant species and communities all suppression actions must still be tailored to preserve wilderness suitable conditions, as per federal Interim Management Policy. These non-impairment standards are known as "light on the land" methods, tactics and strategies, due to the avoidance of surface disturbing activities (vehicle travel, handtool or dozer fireline, and even chainsaw use in some situations) in favor of handcrews and aerial forces such as helicopters and retardant planes.

4) Designated Natural Areas (Pine Creek, North Fork):

   Absent of fire stipulations in the (1952) NA legislation, mitigation is covered under Interim Management Policy (Pine Creek WSA) and the RRCNCA establishment legislation.

5) Priority Management Areas (Blue Diamond Hill; Bridge Mtn):

Fire mitigation focus and effort will be redoubled for these particular locations due to the elevated sensitivity of the vegetative resources at risk, including the complete known global occurrence of two RRCNCA endemic plant species.

6) Riparian areas:

Aside from the factor that riparian areas disproportionately account for the total biodiversity of RRCNCA (endemic and/or special status species included), a unique mitigation issue concerns the chemical composition of aerial fire retardants, many of which function as fertilizers once introduced into biotic systems. Because this can lead to algae "blooms" and other aquatic ecosystem disruptions the use of retardants is prohibited within a 300' lateral buffer zone of any springs or springbrooks. In addition, only retardants of the fugitive type (biodegrading in 14-days or less) should be employed in RRCNCA firefighting operations.

7) Cultural resources; Air quality; Sensitive Species/Habitats:

The full range of resource protection and mitigation issues will be adequately addressed by the on-site presence of one or more Resource Advisors during all Red Rock Canyon fires. In this manner, the trade-off between minimal burn acreages and suppression-caused impacts can be weighed and mitigated on an incident by incident basis. Only under circumstances in which human life or property isthreatened will dozer-contructed fireline be considered for use within the boundaries of the RRCNCA.

Fire Information & Public Education

An integral task in the long-term goal of restoring fire into the natural scheme of Red Rock Canyon and the Spring Range ecosystem will be to effectively offset the "fire is bad" message portrayed during five decades of Smokey The Bear fire prevention campaigns.

The challenge is further complicated by the circumstance that Red Rock Canyon lies adjacent to a major urban population, and by the related condition that the Las Vegas Valley already represents an air quality standard Non-attainment Airshed, as classified by the federal Environmental Protection Agency (EPA). Life and property concerns of the residents in Red Rock's various private in-holdings, such as Bonnie Springs, Calico Basin and Mountain Springs must be considered. For these reasons it will be imperative that all fire-related press releases, interviews, visitor brochure texts and interpretive displays and signs present a consistent, ecologically accurate and balanced depiction of fire's dual role in the Red Rock Canyon environment (ie, destructive incident versus essential ecological process).

Interagency Cooperation (Ecosystem Management)

Due to the agency ownership pattern in the Spring Mountain range and to the inherent circumstance that natural phenomena (such as fire) are completely unaffected by administrative designations or

boundary lines, in order to accomplish the objective of restoring fire on a landscape ecosystem scale, it will be imperative to maximize interagency cooperation and consultation during both the planning and implementation stage of all Red Rock Canyon NCA fire management program actions. This unified approach is required of such efforts as determining fire suppression acreage standards (FMAP zones), implementing of prescribed natural fire policies, parameters and allowable burn sizes, and in negotiating annual smoke emission threshold levels.

Fire History

Standard BLM fire incident reports from the years 1980-1997 were used to compile the Red Rock Canyon fire history and statistical summary presented in Appendix 16. Part A tabularizes the annual wildfire occurrence in terms of fire numbers (or *frequency*) and acres burned, as analyzed relative to the broad vegetative types affected (shrubland versus woodland) and their categorical source of origin (natural, lightning fires versus human-caused fires). The TOTAL and MEAN (average) figures presented in this table show the assertion that wildfire does in fact play a natural role in the Red Rock Canyon/Spring Range ecosystem. Over the eighteen year period, 294 total wildfires occurred in Red Rock Canyon. 37% (108) were lightning-originated fires, but accounted for only 06% of the total acres burned during this same span of years. This wildfire occurrence pattern is typical of the Fir-Pine and Juniper-Pinyon community types in most areas of the western U.S. Fires in this vegetative type primarily are confined to the aerial canopy and seldom generate enough heat and intensity to carry themselves through the sparse ground fuels that are typical of the Juniper-Pinyon community in particular. This expected fire occurrence pattern is further supported by the breakdown of NCA shrubland fires (225) versus woodland fires (69) reported during 1980-1997, corresponding to 77% versus 23% of the total fire occurrence. The conclusion of Appendix 16, Part A, is that the great majority of Red Rock Canyon fires over the past eighteen years have affected shrubland vegetative types and have been human-caused in origin.

This human-caused shrubland fire occurrence pattern is clearly shown in Appendix 16, Part B, which is a list of all individual wildfires greater than 10-acres in size. All but two of these larger fires were human-caused, and only one of them did not take place in shrubland v egetation. Even more revealing is four of these fires (01% of 294 total) account for 86% of all the acres burned in Red Rock Canyon from 1980 to 1997 (2,249 out of 2,605 acres, total). Besides posing a hugely disproportionate ratio of fire occurrence to cumulative acres burned this single statistic illustrates two fundamental conditions affecting the Red Rock Canyon environment in general, and the area's fire ecology in particular. First, the comparatively large size of these four wildfires is symptomatic of the overall presence, and isolated site dominance, of the invasive, non-native grasses Bromus rubens (Red brome) and Bromus tectorum (Cheatgrass). Second, these larger fires point out the increased risk of wildfire in the lower elevations of Red Rock Canyon, lands corresponding both to shrub-dominated vegetative cover and the location of the highest volume of human recreational use and visitation.

As Appendix 16, Part C shows, not all of this increase in human-caused fires is due to sources necessarily associated with either outdoor recreation or routine visitor activities. Vehicle fires (including many due to theft), fireworks, trash dump fires, children playing with fire, arson, and other

miscellaneous causes (vehicle exhaust, firearms, powerline, equipment use, blasting, plane crash and structure fire) accounted for 56%, over one-half, of all wildland fires in Red Rock Canyon from 1980 through 1997. The true percentage of fire occurrence from these sources may be as much as 71%, depending on the actual origin of those fires reported as *human-caused, source unknown*. Urban proximity itself is thus a significant wildfire risk factor affecting the RRCNCA.